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ABSTRACT

This study builds upon prior research studies of academic drift and the diversity of higher education systems to examine how universities grow and to ask whether such growth produces greater or lesser diversity within higher education systems. The study uses data from the Integrated Postsecondary Education Data System from 1988-89 through 1995-96 to compare doctorates and degree programs produced by universities new to the Carnegie classification research university 1 group to those produced by universities that had been in this category since 1987. For purposes of the study, two groups of universities were identified: traditional universities, that is, those classified in 1987; and rising universities, which originally had been classified as doctorate universities, but were reclassified in 1994 as research universities. Findings indicated that while rising universities did add programmatic diversity, they did not offer the same patterns of doctoral programming as did traditional universities, nor were they any more likely than traditional universities to grant doctorates to women or minorities. Thus, the paper questions the assumption that rising universities contribute to diversity, noting that the students in doctoral programs at both traditional and rising universities are similar in terms of gender and racial background. (Contains 27 references.) (CH)

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"Healthy & Expanding?"**An Empirical Analysis of Academic Drift in the Doctorate Sector**

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Introduction

The diversity of institutional types within the U.S. higher education system is enormous and contributes to the productivity of the system. Our system of higher education includes community colleges, research universities, proprietary schools, professional schools, regional universities and liberal arts colleges, to name only some of the unique college and university types available to students seeking a postsecondary education in the U.S. We know that each of these institutional types is more likely to serve certain groups of students. For example, community colleges are more likely than research universities to enroll part-time students without previous postsecondary experience (Birnbaum, 1983; Brint and Karabel, 1989). We also know that specific types of colleges and universities are more likely to be successful in graduating women and minority students (Tidball, 1994; Wolf-Wendel, 1998). In this way, institutional diversity leads to a better fit for students and produces a broader array of degree programs for students, communities and businesses. Higher education in the U.S. is expected to produce a wide variety of products for society (i.e., degree programs, new knowledge, technology, student development) and institutional diversity allows for this outcome. From a policy perspective, a greater degree of institutional types makes more efficient use of finite higher education appropriations. Theoretically, a system of unlike colleges and universities that offered a wide variety of degree programs and types of education for students would be both diverse and highly efficient. This perspective has been adopted by state higher education agencies as they have sought to encourage public colleges and universities to define and adopt unique missions.

It is not clear, however, that the institutional diversity of our higher education system is being increased or even maintained. Several studies have concluded that the diversity of the U.S. higher education system has declined or remained static, even as the number of postsecondary institutions has grown tremendously (Birnbaum, 1983; Schultz and Stickler, 1965; Berdahl, 1985). These studies often measured the types of institutions present in individual state systems in an attempt to measure institutional diversity. In 1994, when the Carnegie Foundation for the Advancement of Teaching most recently re-classified the universe of postsecondary institutions in the U.S., there

was measurable movement "upward" within the university classifications. That is, the movement of universities within the classification system indicates that the increase in the number of Research I Universities (RU1) is greater than the increase occurring in any of the other university classifications.

Table 1. Changes in Carnegie Classification for Research Universities from 1987-1994.[†]

Carnegie Classification	1987	1994 (% change from 1987)
Research I	70	88 (26)
Research II	34	37 (9)
Total	104	125 (20)

[†]Data from *Chronicle of Higher Education*, April 6, 1994, p. A21.

The data displayed in Table 1 illustrate the changes that occurred within the research university sector of higher education between the Carnegie re-classifications of 1987 and 1994.¹ During that time period the number of RU1 universities increased by 26%, while the number of RU2 universities increased by 9%. Taken together, the 20% increase in the number of research universities is dramatic, especially if one considers that if the same trend repeats itself during the seven years from 1994-2001, there will then be approximately 20% more doctorate-granting universities in 2001 as compared to 1987. This type of trend would seem to limit the ability of state higher education systems to efficiently meet the needs of their students and communities.

This trend has not gone unnoticed. David Aldersley (1995) noted, after doing a frequency analysis of the changes noted by the Carnegie re-classification, that, "Despite pressures to re-emphasize the role of undergraduate education, ambitious institutions are apparently still beguiled by the promise of prestige associated with doctorate-level education" (p. 56). Aldersley's response to the expansion trend indicated his belief that this expansion was linked to a quest for prestige on the part of the offending institutions. In contrast, Ernest Boyer of the Carnegie Foundation looked at the changes that occurred between the re-classifications of 1987 and 1994

¹ The 1987 Carnegie Classification used data from IPEDS completions surveys of 1981-82, 1982-83 and 1983-84. The 1994 Carnegie Classification used data from IPEDS completions surveys of 1988-89, 1989-90 and 1990-91.

and declared higher education in the U.S. to be "healthy and expanding" (*Chronicle of Higher Education*, April 6, 1994, p. A17). Boyer's perspective on these changes might have been his attempt to highlight the possibilities associated with a larger number of universities engaging in technology transfer, research and graduate education. Whichever perspective is correct might be based on your assumptions regarding the causes and effects of this expansion. Unfortunately, we know little about how this expansion has affected the diversity of programs and students produced by the research university sector.

The data in Table 1 clearly illustrate population changes that are occurring in the research university sector of higher education. Today, there are more research universities than ever before, and most of these institutions are RU1 universities. Yet, we don't know what these new RU1s are doing, what kinds of degree programs they offer or who they serve. So, the questions remain: Are the new RU1 universities offering the same programs as those previously classified RU1s? And are the new RU1 universities serving different kinds of students than those served by previously classified RU1s? Given the previously mentioned importance of diversity within the U.S. higher education system, especially with regard to the ability of the system to produce a great range of products, this question is worthy of some analysis.

Academic Drift in Higher Education

These changes in Carnegie Classification are consistent with the descriptions of "academic drift" that have been the subject of numerous empirical studies (Berdahl, 1985; Riesman, 1956; Jencks and Riesman, 1968; Neave, 1979; Huisman, 1995; Morphew, 1996). Researchers have concluded that much of the organizational growth that occurs within colleges and universities -- as new degree programs are added -- can be related to "the tendency of institutions, absent any restraint, to copy the role and mission of the prestige institutions" (Berdahl, 1985: 303). Bedroll's description of academic drift describes a process where a group of institutions becomes less diverse over time as a result of institutional mimicry. This phenomenon, when occurring would necessarily lead to less diversity and a more homogeneous system of colleges and universities.

There is research on the topic, though much of it is dated. The most famous and often cited research on academic drift is Riesman's (1956) study. He painted a picture of emulation where less prestigious colleges and universities followed the lead of the more successful and prestigious colleges and universities. His was the famous description of the higher education system as a snake with the less prestigious institutions (the tail) following and emulating the more prestigious institutions (the head). Others, only slightly more recently, have focused on the causes of academic drift and have argued that increased professionalization or because of the state's inability to establish and maintain a diverse system of higher education institutions capable of meeting the needs of students and society (Jencks and Riesman, 1968; Neave, 1979).

Birnbaum (1983), in a very influential and comprehensive look at changes in the institutional diversity of the U.S. higher education system, conducted a longitudinal study from 1960-80 and concluded that diversity had decreased, despite the fact that, during this period, the numbers of students, universities and academic programs grew at a phenomenal rate. His research involved eight states and several different types of higher education systems and governing structures. Birnbaum's (1983) finding that institutional diversity did not increase over time as a function of other kinds of growth was supported by other studies that noted the tendency of smaller colleges to engage in drift or vertical extension (Schultz & Stickler's, 1965). Such findings indicated that enrollment was not always the cause of new degree programs at colleges and universities; rather, the addition of a new degree program was a result of the "pecking order" of prestige (McConnell, 1962). As universities sought to increase their institutional prestige relative to that of other universities, they did so by adding new degree programs that increased their comprehensiveness and ability to gain regional and national stature. This kind of academic drift would almost certainly result in less institutional diversity over time as multiple universities attempted to become more like a single institutional model.

Studies that have focused on graduate degree programs have noted that many of the colleges or universities that began offering doctoral degrees during periods of growth in higher education did not award a significant number of these degrees (Berelson, 1960). This lead some researchers to

the conclusion that the institutional ability to offer an advanced degree may be more important awarding the degree. This is likely a result of the increased institutional prestige that accompanies entry to the graduate degree-granting sector of higher education. This conclusion has been supported in multiple studies on academic drift and program duplication that have shown that the relationship between the demand for a new program and that program's existence are not always cause and effect (Morphew, 1996; Huisman, 1995; Berdahl, 1985). Research on public systems of higher education has shown that institutional diversity can be protected (Huisman & Morphew, 1996; Huisman & Morphew, 1998). Nevertheless, once-diversified state systems of higher education can come to resemble "a tower of Babel" when academic drift is rampant (Miller, 1975: 46).

Taken as a body of literature, this research on academic drift and its effect on institutional diversity in higher education identifies the tendencies of colleges and universities to expand toward a single institutional form. That expansion then limits the production of diverse degree programs and graduates. Some research has identified post-hoc theories that academic drift is driven by a thirst for greater prestige -- by either the department or the institution. What is missing from this body of literature, however, is a longitudinal study of a specific sector of higher education documenting how the expansion that has occurred within that sector has affected its institutional diversity. This paper describes a study that examined the growth in the RU1 sector of higher education to determine whether universities new to this sector have added to the degree programs and doctorates produced.

Research Objectives

Building upon research studies that have examined academic drift or the diversity of higher education systems, this study will add to our knowledge about how universities grow and whether such growth is likely to produce greater or lesser diversity within higher education systems. Using national data identifying the doctorates produced by RU1 universities from 1988-89 through 1995-96, this project will compare the doctorates and degree programs produced by universities new to

this sector to those produced by universities that have resided within this category since the last Carnegie re-classification. This comparison will reveal whether these newer RU1 universities are producing doctoral degree programs in patterns similar to those already produced by previously classified RU1 universities. Moreover, the research study will assess whether a new group of students -- women and those from underrepresented groups -- are the beneficiaries of the doctorate programs at these new RU1 universities.

This research project can be placed within the context of current institutional research and policy efforts to establish better and multiple means of benchmarking; it is important that we determine better ways of identifying and defining differences between institutional types, even within sectors. The approach used in this research project is unique in its characterization of institutional diversity. Where most researchers have focused on control, size and/or selectivity, or even market characteristics (Birnbaum, 1983; Gumport, 1997) when measuring institutional diversity, this study assesses institutional diversity within a specific higher education sector by examining what institutions produce in terms of students and degree programs. As mentioned previously, it is in these two areas that the institutional diversity of the U.S. system has functioned most positively, in providing a) opportunities for a diverse population of prospective students; and b) a great array of degree programs that serve students and society. The project is also part of a larger research agenda including attempts to document and understand more about the diversity of higher education organizations within systems of higher education (Morphew, 1996; Morphew, 1997; Huisman and Morphew, 1998).

Research Procedures

Data from the Integrated Postsecondary Education Data System (IPEDS) database on completions (1988-89 through 1995-96) were used for this research study.² This national data set is appropriate for this study because it identifies degree completions for the universe of degree-

² These parameters were chosen because the 1994 Carnegie re-classification used IPEDS data dating from 1988-89. Completions data from 1996-97 were not available at the time of this research.

granting colleges and universities within the U.S. Moreover, this data set contains descriptive data on doctoral recipients and institutions, including the race and the gender of graduates.³

Using the IPEDS completions data sets from the academic years identified above, the subset of data on doctoral degrees was isolated. Subsequently, those doctoral degrees awarded by current RU1 universities were identified. Two sub populations within this smaller data set were used for this research project. The first sub population consists of all universities classified as RU1 granting universities by the Carnegie Foundation in 1987. This sub population consisted of "traditional" universities. The second sub population consists of universities re-classified as RU1 universities in 1994 that were not classified as RU1s in 1987. For example, this second group would include a university classified as a Doctorate 1 University in 1987 and re-classified as a RU1 in 1994.⁴ This second sub population consisted of "rising" universities. Data documenting the doctorates and degree programs produced by both the traditional and rising sub populations were analyzed to determine whether the products of rising RU1 universities added to the diversity of programs and doctorates produced by traditional RU1 universities during each of the academic years studied.

Using six-digit CIP (Classification of Instructional Program) codes, doctoral degree programs that produced at least one graduate in any academic year were used in this analysis. For the purposes of this analysis, degree programs were classified into one of five programmatic areas (i.e., applied sciences, humanities, professional, social sciences or natural sciences). Analyses were then conducted using these programmatic areas. The IPEDS datasets were used to identify all doctorates produced by rising and traditional universities during each of the academic year. In order to determine whether rising and traditional universities were producing doctorates in each of these programmatic areas as would be expected, a chi square test was used. For this purpose, 2x5 tables were constructed to assess the frequencies of doctoral degree programs produced by rising

³Data on the race of doctoral Completions is available since 1994-95. Data on the gender of doctoral Completions is available for each of the study years.

⁴Other examples of "upward movement" would include a university classified as a Research 2 University in 1987 and re-classified as a Research 1 University in 1994.

versus traditional RU1 universities. This non-parametric measure is appropriate for nominal scales, such as the one constructed here.

For the second part of this research study, the Mann-Whitney U test was used to compare the production of female doctorates and doctorates from underrepresented groups at rising and traditional universities.⁵ The Mann-Whitney U uses a rank-order and sum scheme to determine whether subpopulations are statistically similar with regard to the test variable. Each of the three underrepresented groups (Native American, African American and Hispanic) was analyzed separately for this portion of the research study. In addition frequency analyses were conducted to compare the number of cases where an active doctoral degree program graduated students but did not graduate a female student or a student from an underrepresented groups.

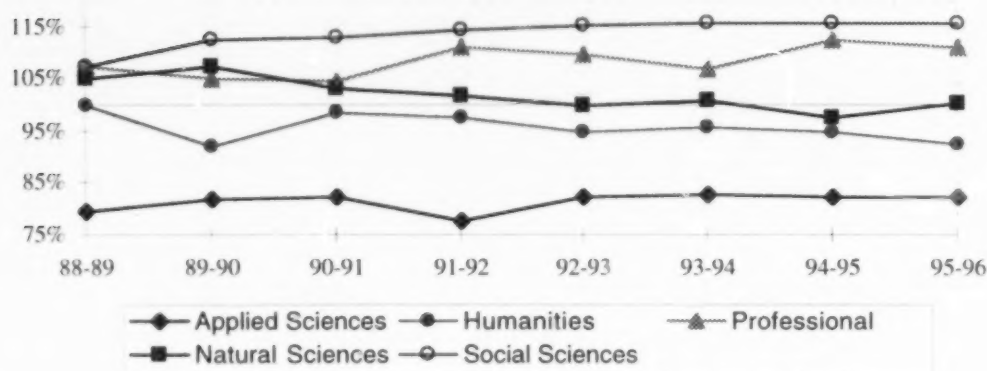
Findings

The chi square test revealed that the distribution of doctoral degree programs across rising and traditional universities varied significantly from what would be expected for each of the academic years studied ($p \leq .05$). That is, the doctoral degree programs in which doctorates were produced were not distributed as would be expected given the number of rising universities as compared to traditional universities. This finding indicates that rising universities are awarding doctorates within these programmatic areas in a pattern dissimilar to that of traditional universities. In effect, they are either more or less likely than traditional RUIs to grant doctoral degrees in specific program areas.

Figure 1 below illustrates the results of the chi square test. The chart in Figure 1 tracks the percentage of observed versus expected frequencies for rising universities in each program area for each academic year studied. A output of greater than 100% indicates that rising universities produced more doctorates within that program area than would be expected. For example, in 1988-89, rising universities produced approximately 80% of the doctorates they would have been expected to produce in the applied sciences.

⁵Underrepresented groups were defined using IPEDS measures. They include Native Americans, Hispanic and African American students.

Figure 1. Doctorates Produced by Rising Universities 1988-89 through 1995-96: Percentage of Observed vs. Expected Frequencies (By Program Area)



Several interesting patterns are present in Figure 1. First, rising universities produced more doctorates than would be expected in three programmatic areas (natural sciences, social sciences and professional) for nearly all of the academic years studied.⁶ And, in each academic year, rising universities produced fewer doctorates in the applied sciences and humanities.

The Mann-Whitney U tests run to compare the production of female doctorates and doctorates from underrepresented groups at rising and traditional universities showed that, except in one academic year, rising universities were no more likely than traditional universities to award doctorates to either women or members of an underrepresented group. Rising universities were more likely than traditional universities to award doctorates to African Americans during 1995-96. However, traditional universities were more likely to award doctorates to Hispanics during 1995-96. Neither subpopulation was more likely to award doctorates to Native Americans during either 1994-95 or 1995-96.

Rising universities were also no more likely -- and in most cases, less likely -- to award doctorates to women. In fact, traditional universities were more likely than rising universities to award doctorates to women in each of the study years except 1995-96. The frequency analysis showed no significant differences between rising and traditional universities in the percentage of

⁶In 1994-95, rising universities produced slightly fewer natural sciences doctorates than would be expected.

time where doctoral degrees were awarded to a group that included no women or members of an underrepresented group.

Importance of Findings to Institutional Researchers and Policymakers

The fact we must now face is that graduate education has grown faster than warranted by the demand for it and resources available to support it. We can no longer justify the number, the array, and the cost of all the programs we are offering (Callan, 1978, p. 5).

While Callan's statement was relevant in 1978, it is more relevant to discussions today as we witness an expansion of the research university model during an era of relatively static state expenditures for higher education. In today's fiscal environment, where we can only hope for funding increases that meet the rate of inflation, the addition of new graduate degree programs reflects the robbing of Peter to pay Paul. That is, when institutions spend on the implementation of new graduate degree programs, they necessarily spend less on existing graduate and undergraduate degree programs and other student services. This reality is a primary reason that state higher education agencies have asked colleges and universities to narrow their mission and scope.

Policy makers at the institutional and state levels have recognized the need to maintain systems of diverse colleges and universities. These diverse systems would be accessible to many types of students, would offer a wide range of degree programs and would focus on distinct institutional missions. This need is particularly important as a means of accommodating the diverse group of learners that colleges and universities confront today and in the future. With this in mind, state systems of higher education have begun to assess who their institutions serve and how they can encourage institutions to seek out unique niches and missions as a means of creating more diversity in their systems.

Yet, while we know that our system(s) of higher education are expanding over time and, as a result, are becoming relatively top-heavy with more doctorate-granting and comprehensive institutions, we know very little about how the expansion of our system of higher education is impacting the institutional diversity of that system, in terms of the graduates and degree programs produced. This research study focused on the products of RU1 universities in an attempt to

provide important knowledge for policymakers at the institutional and state levels who are involved in strategic planning, benchmarking or other activities with objectives including the continued maintenance of a diverse system of higher education organizations. The findings from this study are relevant to those who ask "Who do these new research universities serve?" or "How do these new research universities compare to former research universities in terms of the degree programs they offer?"

Discussion

In short, this analysis showed that rising universities do add programmatic diversity to the degree programs offered by RU1 universities. However, the study's results also indicate that rising universities were not more likely than traditional universities to grant doctorates to women or members of underrepresented groups. These findings are enlightening, given the context of academic drift, and provide direction for future research on the expansion of the research university. They also present questions for higher education researchers interested in the construction and application of theories that explain how and why universities expand their programmatic offerings.

The research presented here has shown that universities new to the RU1 sector do not offer the same patterns in programming as do traditional RU1 universities. This begs the question: Why? Several possible theories are available. First, universities new to the RU1 sector may serve different constituents, with interests in doctoral degree programs that do not mirror those of students served by traditional universities. Yet, because rising universities were not more likely than traditional universities to offer degree programs to members of underrepresented groups or students, this theory cannot be supported by this research. Second, it may be that rising universities are more likely than traditional universities to respond to external economic pressures, such as increased demand for degree programs from students or the business community. More research would be needed to support such a theory. This research could focus on those programs in which rising universities offered a greater number of programs than would be expected (natural

sciences, social sciences and professional programs). It would be necessary to link demand in rising universities' communities and regions to each of these program areas. Finally, a sociological perspective might hypothesize that rising universities were more likely to offer degree programs in the areas of natural sciences, social sciences and professional studies because these programmatic areas were perceived as a means of increasing the stature of the rising university. Research conducted to support this hypothesis might focus on the relative prestige of and demand for specific degree programs in these three areas. Where a doctoral degree program was adopted without evidence of need (either student or business demand), a qualitative inquiry might assess whether the increased prestige associated with a doctoral degree program played a role in the addition of the specific degree program.

Regardless of the cause(s), trends in the expansion of the RU1 university need to be examined. Because our system of higher education benefits from institutional diversity, any trend that threatens that diversity is worthy of research. This research presents a jumping-off point for more research on the subject of university expansion, especially within the RU1 sector. Each of the questions raised above is worthy of in-depth research to determine the "whys" associated with the growth of this institutional type.

The findings from this study that indicate that new RU1 universities are no more likely to produce doctorates for women or members of underrepresented groups are also worthy of more research and thought. Because RU1 universities are a primary source of new faculty at colleges and universities, and because many researchers have noted that producing more college and university faculty of color is an important goal for higher education (see e.g., Blackwell, 1996; Cross, 1996; Nakankishi, 1996; Olivas, 1996), we need to assess which types of universities are most productive in terms of women and underrepresented doctorates in order to understand why. It might have been hypothesized (see above) that universities new to the RU1 sector would have facilitated this movement upward by courting students previously underserved by both research and comprehensive universities. After all, weren't these newer RU1 universities more likely to enroll a greater relative percentage of students from underrepresented backgrounds? For example,

included within the rising RU1 university group are urban universities such as Temple and Wayne State Universities. These universities' undergraduate students are a diverse group and do not resemble the student bodies at traditional RUIs like the Universities of Michigan and Pennsylvania -- located near Wayne State and Temple, respectively. However, it does not appear that rising RU1 universities made their move upward within the Carnegie Classifications by offering degree programs to students who might otherwise not have attended a research university. In fact, the findings from this study indicate that the student bodies in the doctoral programs at rising and traditional universities are not dissimilar in terms of their gender or racial background. This finding, while unexpected, might be the most important byproduct of this research.

Future research on who is served by these new research universities would be well served to investigate the relationship between institutional type and graduate student bodies. That is, are urban universities or other institutions with relatively large African American or Hispanic undergraduate populations more likely to enroll similar kinds of graduate students? Or, do these institutions classify themselves differently on the graduate and undergraduate markets? These kinds of question will signal how institutions perceive their goals and how we measure prestige in terms of higher education.

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